

(diethylcyclopentadienyl) (octahydrofluorenyl) titanium
dichloride, etc.

(4) Transition metal compounds having two conjugated,
5-membered cyclic ligands, in which the two ligands are
crosslinked with a germanium-, aluminium-, boron-,
phosphorus- or nitrogen-containing hydrocarbon group, such as
dimethylgermylenebis(indenyl) titanium dichloride,
dimethylgermylene(cyclopentadienyl) (fluorenyl) titanium
dichloride, methylalumylenebis(indenyl) titanium dichloride,
phenylamylenebis(indenyl) titanium dichloride,
phenylphosphylenebis(indenyl) titanium dichloride,
ethylborylenebis(indenyl) titanium dichloride,
phenylamylenebis(indenyl) titanium dichloride,
phenylamylenecyclopentadienyl (fluorenyl) titanium
dichloride, etc.

(5) Transition metal compounds having one conjugated,
5-membered cyclic ligand, such as
pentamethylcyclopentadienyl-bis(phenyl) aminotitanium
dichloride, indenyl-bis(phenyl) aminotitanium dichloride,
pentamethylcyclopentadienyl-
bis(trimethylsilyl) aminotitanium dichloride,
pentamethylcyclopentadienylphenoxytitanium dichloride,
dimethylsilylene(tetramethylcyclopentadienyl)-
phenylaminotitanium dichloride,
dimethylsilylene(tetramethylcyclopentadienyl)-t-

butylaminotitanium dichloride,
dimethylsilylene(tetrahydroindenyl)decylaminotitanium
dichloride, dimethylsilylene(tetrahydroindenyl)-
[bis(trimethylsilyl)amino]titanium dichloride,
dimethylgermylene-
(tetramethylcyclopentadienyl)phenylaminotitanium
dichloride, pentamethylcyclopentadienyltitanium
trimethoxide, pentamethylcyclopentadienyltitanium
trichloride, (t-butylamido)(tetramethyl- η^5 -
cyclopentadienyl)silane-titaniumdimethyl, (t-
butylamido)(tetramethyl- η^5 -cyclopentadienyl)-1,2-ethane-
diyltitanium dichloride, (methylamido)(tetramethyl- η^5 -
cyclopentadienyl)-1,2-ethane-diyltitanium dichloride,
(ethylamido)(tetramethyl- η^5 -cyclopentadienyl)-
methylenetitanium dichloride, (t-butylamido)dimethyl-
(tetramethyl- η^5 -cyclopentadienyl)silane-titaniumdichloride,
(benzylamido)dimethyl-(tetramethyl- η^5 -
cyclopentadienyl)silane-titanium dichloride,
(phenylphosphido)dimethyl-(tetramethyl- η^5 -
cyclopentadienyl)silane-titaniumdibenzyl, etc.

(6) Transition metal compounds having two conjugated,
5-membered cyclic ligands in which the ligands are double-
crosslinked, such as (1,1'-dimethylsilylene)(2,2'-
isopropylene)bis(cyclopentadienyl)titanium dichloride,
(1,1'-dimethylsilylene)(2,2'-dimethylsilylene)-

bis(cyclopentadienyl)titanium dichloride, (1,1'-
dimethylsilylene) (2,2'-isopropylidene) -
bis(cyclopentadienyl)dimethyltitanium, (1,1'-
dimethylsilylene) (2,2'-isopropylidene) -
bis(cyclopentadienyl)dibenzyltitanium, (1,1'-
dimethylsilylene) (2,2'-isopropylidene) -
bis(cyclopentadienyl)bis(trimethylsilyl)titanium, (1,1'-
dimethylsilylene) (2,2'-isopropylidene) -
bis(cyclopentadienyl)bis(trimethylsilylmethyl)titanium,
(1,2'-dimethylsilylene) (2,1'-ethylene) -
bis(indenyl)titanium dichloride, (1,1'-
dimethylsilylene) (2,2'-ethylene) -bis(indenyl)titanium
dichloride, (1,1'-ethylene) (2,2'-dimethylsilylene) -
bis(indenyl)titanium dichloride, (1,1'-
dimethylsilylene) (2,2'-cyclohexylidene) -
bis(indenyl)titanium dichloride, etc.

(7) Derivatives from compounds of (1) to (6) noted above, which are produced by substituting the chlorine atoms in those compounds of (1) to (6) with any of a bromine atom, an iodine atom, a hydrogen atom, a methyl group, a phenyl group and others, and by substituting the center metal, titanium in those transition metal compounds with any of zirconium, hafnium, niobium, molybdenum, tungsten and others.